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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,613	10/24/2003	Jian He	15436.249.34.1	6482

22913 7590 01/08/2007

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EXAMINER

PAK, SUNG H

ART UNIT	PAPER NUMBER
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2874

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/693,613

Applicant(s)

HE ET AL.

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 13, 15-20, 22-32 and 34-36 is/are rejected.
- 7) ☒ Claim(s) 11, 14, 21, 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/10/2006 has been entered.

Response to Arguments

Applicants' arguments for patentability of pending claims have been carefully reviewed by the examiner. However, the examiner respectfully submits that the arguments are moot in view of a new ground of rejection provided in this office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 8-10, 12-13, 15-16, 18-20, 22-28, 30-32, 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Nikolov et al (US 2003/0223670 A1).

Art Unit: 2874

Nikolov reference discloses an optical coupler comprising: an input polarization maintaining fiber having a polarization axis (paragraph 0049, paragraph 0053); at least one optical component optically coupled to said input optical fiber ('250' Fig. 8), said at least one optical component splitting an input light beam received from said at least one optical component into a first output light beam having a first polarization state and a second output light beam having a second polarization state (Fig. 8, paragraph 0054); at least a first and second output optical fiber to receive said first and second output light beams respectively (Fig. 8); wherein changing an angular orientation of said polarization axis relative to an optical axis of said at least one optical component changes a coupling ratio (please refer to paragraph 0066 in light of paragraph 0053; paragraph 0060 in light of paragraph 0053; also see Fig. 12);

wherein said optical component is a polarization beam splitter (paragraph 0041);

wherein fibers are mounted in a ferrule (paragraph 0073);

wherein said ferrule is mounted in a housing and said housing further holds a lens to focus/ collimate said input beam into said optical component, or focus/collimate output beams into output fibers (the lenses being '210', '220' Fig. 8- although the housing is not explicitly depicted in the figure, there must be some housing for mounting the ferrule and the lens for establishing optical alignment);

wherein said angle is between about 5 to 15 degrees (Fig. 12).

Regarding claims 3-4, 26, Nikolov fully discloses (and therefore anticipates) a prior art set up utilizing pair of birefringent crystals (paragraphs 0005-0008).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7, 17, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nikolov et al (US 2003/0223670 A1).

Nikolov reference discloses an optical device as discussed above, except it does not explicitly teach the use of optical fiber end surface that is cut at an angle. However, such angle cut is well known and common in the optical fiber art. It is well known to one of ordinary skill in the art that such angle cut reduces back reflection and reduces coupling loss. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Nikolov to have optical fibers with endfaces having angle cuts.

Allowable Subject Matter

Claims 11, 14, 21, 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: although an optical coupler having an polarization beam splitting optical component that rotates to change output coupling ratio is known in the art, none of the prior art fairly teaches or suggests such an optical coupler having first and second optical fibers being rotated together with the polarization beam splitter as claimed in the instant application.

Conclusion

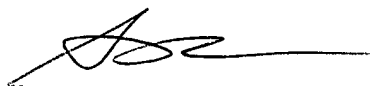
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Huang et al (US 2002/0110307 A1), Pan et al (US 6,040,944) and Gage et al (US 6,860,644 B2) disclose optical coupling arrangements with rotatable optical elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak
Primary Patent Examiner
Art Unit 2874